Vol 1, April 23, 2018

CLINIC NEWSLETTER

DECISIONS IN CARIES TREATMENT

BONDING AGENTS IN CLINIC

DIABETES AND ORAL HEALTHCARE

Faculty Cross-training Spring 2018

Decisions in Caries Treatment

International Caries Detection and Assessment System (ICDAS system)

ICDAS 0 Sound
ICDAS 1 First visual change in enamel (seen only after prolonged air drying or restricted to within the confines of a pit or fissure)
ICDAS 2 Distinct visual change in enamel
ICDAS 3 Localized enamel breakdown (without clinical visual signs of dentinal involvement)
ICDAS 4 Underlying dark shadow from dentin
ICDAS 5 Distinct cavity with visible dentin
ICDAS 6 Extensive distinct cavity with visible dentin

Pacific Protocol

ICDAS 0, 1, 2 Sealant (air abrasion recommended for ICDAS 2 sealants)
ICDAS 4, 5, 6 Restoration

ICDAS 3 is a grey zone, caries risk should decide if a sealant or restoration is needed

Direct Pulp Cap (MTA)

- Review pre-op signs and symptoms
- Rubber dam isolation
- Preparation outline and peripheral caries removal complete
- Remove carious dentin over pulp horn
- Place cotton pellet with NaOCl for one minute
- Remove pellet, do not rinse
- Mix MTA with sterile water or local anesthetic
- Exposure covered with MTA slurry, wound must be completely covered
- Place Activa Base/Liner or RMGI over MTA. Cover completely and light cure
- Place permanent direct restoration

Indirect Pulp Cap (Activa Bioactive Base/Liner)

- Establish proximity of pulp, typically 0.5mm away from pulp
- Establish clean outline and DEJ
- Remove softened dentin, leaving structure nearest to pulp
- Place Activa Base/Liner over the soft dentin, light cure
- Place permanent direct restoration

Bonding Agents in Clinic Treatment

Optibond Solo Plus being phased out

Scotchbond Universal used ONLY for direct restorations

Prelude used for bonding indirect restorations and fiber posts

Scotchbond Universal Adhesive

Direct Restorations

On Dentin:

1. Place rubber dam
2. Scrub Scotchbond Universal for 20 seconds on dentin, use firm scrubbing technique
2. Air thin for 10 seconds
3. Light cure for 20 seconds

On Enamel and Dentin:

1. Place rubber dam
2. Use phosphoric acid on enamel for 15 seconds
3. Use high volume suction to remove phosphoric acid
3. Rinse with water, do not overdry
4. Air thin with gentle stream or blot with damp cotton pellet
5. Apply Scotchbond Universal on enamel and dentin and scrub for 20 seconds, use firm scrubbing technique on dentin
6. Air thin for 10 seconds
7. Light cure for 20 seconds

For Class V cervical restorations, literature suggests that using total etch, phosphoric acid etching with Scotchbond Universal Adhesive produces higher bond strength. Recommend air abrasion on enamel and dentin rather than roughening with bur.

- Lawson, N.L., Robles, A., Fu, C.C., Lin, C.P., Sawlani, K., Burgess, J.O., Two-year clinical trial, of a universal adhesive in total-etch and self-etch mode in non-carious cervical lesions. Journal of Dentistry, 43 (2015) , 1229-34.
- Loguercio, A.D., Paula, E.A., Hass, V., Luque-Martinez, I., Reis, A., Perdigao, J., A new universal simplified adhesive: 36-Month randomized double-blind clinical trial. Journal of Dentistry, 43 (2015), 1083-92.

Bonding Agents in Clinic Treatment

Prelude
Build up

Prelude 3 step: Primer, Adhesive and Link to be used with Anchor build up material.

Prelude
Fiber post

1. Verify **obturation** is satisfactory.
2. **Canal Preparation:** Irrigate canal with alcohol. Irrigate canal with 2 cycles of water and suction out visible water. Remove additional moisture with paper points.
3. **Adhesion:** Apply **Prelude Primer** to entire canal and coronal tooth structure with microbrush (canal diameter microbrushes are available at the dispensary) for 15 seconds with firm scrubbing motion. Gently air dry canal and tooth with dry air stream for 7-10 seconds. Insert paper point to the terminal aspect of the canal to absorb pooled primer. Apply **Prelude Adhesive** to entire canal and coronal tooth structure and scrub firmly for 15 seconds. Evaporate solvent with gentle air stream initially and then increase air pressure to thin the adhesive and drive off the ethanol. Do not cure. Apply **Prelude Link** liberally onto the entire canal and coronal tooth structure, no need to scrub. Evaporate solvent with dry air stream for 5 seconds and immediately proceed to post delivery.
4. **Post and build up placement:** Place **Anchor** syringe into the canal to the terminal length of the post space. Extrude Anchor and back fill the space while lifting the tip out of the canal orifice. Do not overfill. Immediately seat the selected fiber post to full length of post space and press firmly. Post will not rebound from hydraulics. **REMEMBER CHEMICAL REACTION STARTS WHEN ANCHOR IS INTRODUCED IN THE CANAL.** Flash cure canal orifice/ fiber post for 5 seconds total from buccal to lingual to fix the post from a lateral angle.
5. **Place remainder of build up** flash light cure for 2 seconds (may use matrices or free hand). Once buildup is completed to desired contour, lateral flash stabilization may be done. Allow material to self-cure for at least 3 minutes from the finish of Anchor placement. The, light cure 20 seconds from all directions.
6. **Section colored tip of the fiber post** to desired build up height, hold light over the post and light cure for 30 seconds to transmit light to the deepest canal aspect.
7. The build up is now ready for **preparation**.

- Meharry M, Kwon SR, Chen JW (2013) Comparison of Alternate Protocols for Placing a Sixth Generation Dental Bonding Agent. Dentistry 3:178. doi:10.4172/2161-1122.1000178
- Belli S, Ozcopur B, Yesilyurt C, Akman M, Breslin N, Dorsman G. Effect of Cyclic Loading and an intermediate material on the micro tensile bond strengths of a dual-cure resin cement to dentin. Journal of Dental Sciences (2012) 7, 33-42.

Bonding Agents in Clinic Treatment

Prelude

Bonding protocol for ceramic veneers Lithium disilicate (e.max), Leucite-reinforced (Empress).
Kerr NX3 Nexus- light cure cement.
Sandwich technique -Use appropriate isolation (rubber dam recommended)
1. No etching needed of internal surface of restoration with hydrofluoric acid since our restorations come pre etched from lab (decontaminate after try-in). Can clean internal surface of restoration after try-in with phosphoric acid for 10 seconds, rinse and dry.
2. Apply silane to internal surface of porcelain 60 sec. Air dry gently.
3. Apply to the internal surface of restoration Prelude Adhesive (do not light cure), air thin and cover under orange box.
4. Tooth surface needs to be cleaned with pumice and water.
5. Apply Teflon Tape to teeth mesial/distal to preparation (if at risk of inadvertent bonding).
6. Etch bonding tooth surface with phosphoric acid. Apply to enamel first and dentin second with maximum etch time to dentin 15 seconds. Rinse, gently dry keeping dentin moist.
7. Apply Prelude Adhesive to etched tooth surface per manufacturer recommendations. Air thin.
8. Remove restoration from box, apply Nexus resin light cure cement to the intaglio of the veneer and seat the restoration onto the tooth structure.
9. Do quick 1-2 seconds flash cure with restoration in place.
10. Remove excess cement.
11. Final light cure.
12. Check occlusion

Bonding protocol for short or overly tapered tooth preparations, long-span prostheses, excessive occlusal force expectation or previously loose fixed units to be restored with: Lithium disilicate (e.max) Monolithic Zirconium (BruxZir type), or Porcelain Fused to Zirconium (LAVA), Porcelain Fused to Metal. Also indicated for all-ceramic inlays and onlays.
Kerr NX3 Nexus-dual cure cement.
1. **For Lithium disilicate only**: Can clean intaglio of restoration after try-in with phosphoric acid for 10 seconds, rinse and dry. Apply silane to internal surface of porcelain for 60 sec, air dry gently.
2. **For zirconium and metal crowns only**: After try-in, sandblast intaglio surface of the restoration with SilJet, clean with air. Scrub with phosphoric acid for 10 seconds, rinse and dry. Apply silane to internal surface of porcelain for 60 sec, air dry gently.
3. Now you are ready to treat **Lithium disilicate, zirconium and metal crowns with Adhesive**: Apply Prelude Adhesive to internal of restoration (do not light cure), air thin and store it under an orange box or bin to protect from light. (Do not place cement at this stage as the dual cure cement will start to set).
4. Clean tooth surface with pumice and water.
5. Apply Teflon tape to teeth mesial/distal to preparation (if at risk of inadvertent bonding).
6. On tooth surface scrub Prelude Primer (15 sec), air thin 10 sec, scrub Adhesive (15 sec), air thin 10 sec, then paint on Link. If majority of restoration margin end on enamel (as in inlays and onlays), selective phosphoric acid etch can be employed prior to dentin bonding. If majority of restoration margin is in dentin, as in full crowns, self-etching primer is adequate.
7. Remove restoration from box and apply Link to internal surface of restoration. Air thin.
8. Dispense Nexus resin cement (base and catalyst dual cure) into restoration evenly and seat the restoration onto the tooth structure. Nexus will set quickly.
10. Remove excess cement.

Diabetes and Oral Healthcare Treatment
Bayer Glucometer

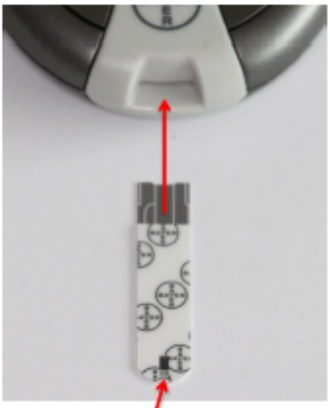
Step 1: Contents of the container from the dispensary

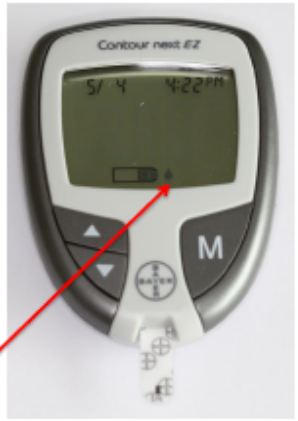
The container will contain the
- Glucometer

And the following single use items:
- Disposable "ONE" use harpoon/lancet device
- Alcohol Wipes if available
- One Test Strip.

Step 2: Clean selected finger before using lancet.

Step 3: Place test strip into glucometer





- Place gray end of Test Strip into Glucometer as shown – the machine will automatically turn on and is ready to use. It will stay on for 2 minutes. Leave the test strip inserted.
- When the blood drop symbol appears, apply blood to the end of test strip as shown in #5

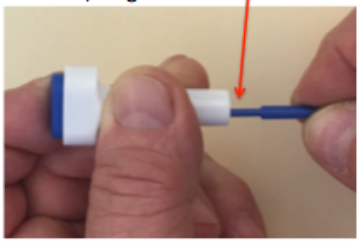
Step 4: Use of Lancet

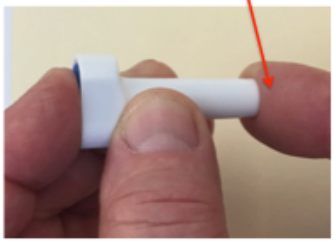
a) Twist Blue tip and remove

Be sure NOT to press the blue plunger button until the lancet is pressed to the finger.
This is a "ONE" use device. The needle automatically retracts after the plunger is pressed so there is no danger of exposure!

In this example the patient is using the lancet device.
Hence, no gloves

ENTIRE DEVICE is disposed in Sharps container





Step 5: Obtaining Blood Sample

After using the lancet apply pressure to the finger.
When cleaning up, discard the lancet in the "sharps" container.
Insure to apply enough pressure onto finger to express blood

Immediately touch the tip of the test strip to the drop of blood. Hold strip in blood drop until meter BEEPS.

Step 6: Meter Readout

After the meter BEEPS, it will start to count down from 5 seconds.

After the 5 second count down, the meter will display the glucose reading. Do NOT touch the test strip during the countdown!!
Once the reading is displayed remove the strip and discard.

AFTER WIPE DOWN OF THE BOX AND THE METER, RETURN WITH THE INSTRUCTIONS TO THE DISPENSARY.

You should expect to see a number from 70-130 mg/dL in a patient with good glycemic control depending on food intake and how much time has passed since the last meal. In diabetic patients, you may see much higher or much lower numbers. You should be more concerned about a lower number. In a diabetic patient it is safer to treat them with a higher than normal number as the patient will burn glucose during the dental appointment.

If you have a diabetic patient with a **glucose reading below 70 mg/dL you should not proceed** with a Main Clinic dental appointment without the patient eating or drinking a high sugar supplement; then retest the glucose level before proceeding. Each dispensary has apple juice available for diabetic patients with low sugar levels as well as a new packet with the lancet device and the test strip.

There are two types of diabetic patients:

Type 1 diabetes mellitus is more serious and concerning as they cannot make insulin due to auto-immune destruction of the beta cells in their pancreas. Therefore type 1 diabetics generally will need to inject themselves with insulin several time/day.

Type 2 diabetes mellitus generally used to be found in older and more obese patients. However in the past 20+ years we have seen an alarming increase in teenagers and adults being diagnosed with Type 2 diabetes. This has been partially attributed to consumption of fast food and sugary soda drinks that are making up a larger portion of the daily dietary intake in this population. We are seeing the beginning of an epidemic of Type 2 diabetes associated with obesity. The CDC estimates that there are approximately 25 million undiagnosed Type 2 diabetics in the US.

Those patients who are diagnosed as having Type 2 diabetes will generally be on prescription medication to control
the disease. Many Type 2 diabetics are now also prescribed insulin injections to help manage their condition. Metformin and Glyburide/Glipizide are the most common oral medications and are often used in combination in patients who are noninsulin dependent, NIDDM.

Metformin: Decreases hepatic glucose production, decreasing intestinal absorption of glucose and improves insulin sensitivity (increases peripheral glucose uptake and utilization).

Glyburide/Glipizide: Stimulates insulin release from the pancreatic beta cells; reduces glucose output
from the liver; insulin sensitivity is increased at peripheral target sites.

While a glucometer reading will give us the current blood glucose level, it does not give a true picture of whether the

Thanks to our contributors:

Dr. Pat Roetzer

Dr. Fred Fendler

Dr. Karen Schulze

Dr. Jeff Miles

Dr. Anders Nattestad

Pictures: Mr. Jon Draper

Materials for Fabricating Provisionals/Temporaries

Tuff-Temp to be phased away and Integrity to be reintroduced in clinic.

Please give a warm welcome to our new faculty!

Dr. Jack Harouni	**Group Practice 2A**
Dr. Tiffany Giang	**Group Practice 2C**
Dr. Scott Dexter	**(Local Anesthesia)**

Please check Pacmanual for updates:

www.dental.pacific.edu

Under Quick Links

Pacmanual

password: pacific

Use of Cameras in Clinic

Second year students must use the large Canon camera for first four cases.

After that students can use either the large or the small camera at their discretion.

Delivering Oral Care to Pregnant Women: Pregnancy Considerations

Preventive, Diagnostic and Restorative dental services are not associated with increased risk of perinatal complications. Not treating active disease process and infection during pregnancy is associated with far greater consequences than the administration of medications used for dental care.

Periodontal health should be addressed.

Dental Abstracts: Vol 63(2) 2018

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